

10/567990

IAP20 Res'd PCT/PTO 10 FEB 2006

ABSTRACT

This invention concerns quantum computers in which the qubits are closed systems, in that the particle or particles are confined within the structure. A "site" can be produced by any method of confining an electron or other quantum particle, such as a dopant atom, a quantum dot, a cooper pair box, or any combination of these. In particular the invention concerns a closed three-site quantum particle system. The state in the third site is weakly coupled by coherent tunnelling to the first and second states, so that the third state is able to map out the populations of the first and second states as its energy is scanned with respect to the first and second states. In second and third aspects it concerns a readout method for a closed three-state quantum particle system.